PROJECT NUMBER: 1806
PROJECT TITLE : New Tobacco Processes
PROJECT LEADER : T. C. Holland
PERIOD COVERED : February, 1991

I. PRIMARY IMPROVEMENT PROGRAM

A. Objective: Characterize the existing primary process to establish baseline thermal history, chemical changes, and flavor reactions. Identify equipment and process modifications to simplify the primary process to provide a low operating cost and highly flexible primary operation.

B. Status: **Thermal Treatment of Burley** - Modification of the Sargent tray dryer is complete and checkout of the unit is in progress. The tray dryer is designed to provide controlled drying conditions of cased burley tobacco to establish the chemical and subjective impact of different thermal treatments.

Samples for subjective and chemical analysis will be generated in March with analytical and subjective correlation completed by late May.

Flow Thru Hopper Trials - An economic analysis was conducted by Operations Analysis to establish estimates of dollar savings available from improved yields and reductions in tobacco weight projected for the cut filler delivery program. An annual savings of $220,000 per billion cigarettes produced would be generated by achieving the projected goal of the cutfiller delivery program of 40 mg weight reduction and a 1.0 percent yield improvement.

A job order was prepared for the purchase of the Rothmans Flow-Thru Hopper for the Mark 9 maker. The unit will be evaluated for improved cutfiller survivability through the maker with both conventional and non-pneumatic cutfiller delivery.

A meeting was held with representatives from Rothmans to outline the joint development of a cutfiller delivery system. The system will include non-pneumatic cutfiller delivery to the maker, external maker winnowing, and modifications to the Protos hopper. A proposal from Rothmans is expected in early March.

Improved Stem Utilization Trials - A study has been initiated to evaluate improved utilization of DIET stem (removed from the VT separator) by shredding or cutting to an acceptable product that can be reintroduced directly into the blend. The DIET stem is currently used as a feedstock for RL.

DIET stems were shredded at a series of moisture contents using a Sprout Bauer refiner. Samples were collected for CV, sieve and objectionable stem content. Preliminary results will be available in early March. The study will be extended to include treatment of winnowers.

C. Plans: A capital appropriation will be prepared to provide funding for the joint development of a non-pneumatic cutfiller delivery system.

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II. CARDWELL REORDERING CONVEYOR

A. Objective: Develop improved DIET reordering system.

B. Status: A six deck Cardwell vibrating conveyor has been purchased for evaluation as a second stage reordering conveyor. Evaluation of both spray reordering and humid air reordering can be accomplished with the unit. Delivery of the unit is expected at the end of March.

In cooperation with Dr. J. Crump and W. Winterson, a second series of reordering tests was conducted to establish the conditions required for humid air reordering of DIET. The air conditions for the Cardwell reordering unit have been specified. A cost estimate for the air handling equipment is being prepared.

C. Plans: Layouts for the installation of the Cardwell in D Pilot Plant will be prepared.

III. RF TREATMENT OF IMPREGNATED FILLER

A. Objective: Investigate the use of Radio Frequency treatment of impregnated filler to improve the DIET product quality.

B. Status: Test results indicate that RF drying does not provide adequate treatment for expansion of either liquid or gaseous impregnated filler. The unit will be returned to the vendor at the end of the month.

C. Plans: No further studies of RF treatment of impregnated filler are planned.

IV. BL PLANT ENVIRONMENTAL STUDY

A. Objective: Identify the point source stack emissions and waste water effluents at the BL Plant. Establish methods for reducing emissions.

B. Status: Material balance sampling around the sheet dryers was conducted to confirm the findings of the air emission study. Process and water sampling was also conducted to isolate and quantify water effluent from the BL Plant. All test results are expected in early March.

C. Plans: Process changes at the BL Plant required to reduce air and water emissions will be investigated.

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